

# Abstract

## **A Study of association between physical activity and BMI in different levels of staff at Christian Medical College, Vellore, a tertiary centre, South India.**

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**Introduction:**Non communicable diseases will account for almost 75% of deaths and 60% of the global disease burden by the year 2020. Physical activity plays a major role in the prevention of this increasing burden of diseases. The work related environment may affect their exercise habits. This study aimed at studying relationship between measured physical activity and BMI.

**Methods: Study design-** Case control study. Population: Staff who have attended annual health checkup in 2015. Cases: 50 Overweight and 50 obese persons; Controls: 50 Normal BMI. Cases will be categorized based on their job categories. Both groups will have physical activity measured using a pedometer over 5 days (Monday- Friday) and also using a physical activity questionnaire.

**Results:**Of 3000 subjects who had health check up in staff clinic, 132 participants were agreed to participate in the study. Mean step count and PAI index scores were found to be higher among the attenders and it was statistically significant across the groups ( $p=0.005$ ). Male participants were able to generate greater maximal physical activity compared to female participants (mean step count 12610.89 vs 11008.13) and this difference was statistically significant ( $p=0.027$ ). The mean step count in normal BMI category was  $9714 \pm 3693.1$ , compared to  $9247 \pm 2905.9$  in overweight and  $8419.39 \pm 2342.6$  in obese categories. This difference was not statistically significant. There was statistically significant association between proportion of overweight and obese with PAI index ( $p=0.001$ ).

**Conclusion:**Physical activity measured by questionnaire inversely correlates to BMI  
Physical activity measured by pedometer does not correlate to BMI, probably because physical activity is primarily job related and only a small proportion of staff undertake leisure related physical activity.